

Application No.: 10/726,790

Case No.: 59414US002

REMARKS

Claims 19-39 are being canceled without prejudice. Claims 2-5, 10, 11, and 13-18 are being amended as explained below. After entry of this amendment, claims 1-18 will be pending. Amendments to the specification, explained more fully below, are also being made. Reconsideration and continued examination of this application is respectfully requested in view of the amendments above and the remarks that follow.

Response to Election/Restriction

In response to the Examiner's formal restriction between Group I (method claims 1-18) and Group II (article claims 19-39), Applicants elect Group I, i.e., claims 1-18. As a result, claims 19-39 are being canceled without prejudice.

Drawing objections

The drawings were objected to because they include reference numerals not mentioned in the description; reference numerals 84 (FIG. 9) and 314 (FIG. 15) were specifically cited in the Office Action.

In response, Applicants have amended the specification to include citations to the cited reference numerals, and made other amendments to correct minor omissions or inconsistencies in the specification and drawings, to wit:

(1) Reference numeral 84 appears in FIG. 9 but not in the description of that figure. Therefore, the amendment above to the last full paragraph on page 12 is being made to insert the missing reference numeral.

(2) FIG. 15 includes reference numerals 312 and 314 that were not mentioned in the specification. It is plain to see from the drawing itself, and in view of similar structures appearing in other figures (e.g. FIGS. 1, 5, 6, 7, 9), that 312 refers to an LED and 314 refers to a heat sink on which the LED is mounted. This description has therefore been made explicit in the amendment to the paragraph bridging pages 27-28.

(3) The same paragraph (the one bridging pages 27-28) also erroneously refers to "optically transparent material" with reference numeral 310, previously used to identify the entire phosphor based light source. The amendment changes the reference numeral to 318, consistent

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with the figure. Note that optically transparent material 318 is used in both the phosphor-reflector component 311 and the LED component 309.

Support for the amendments can be found in the application-as-filed as explained above. No new matter has been added. In view of the amendments, the drawing objections should be withdrawn.

Voluntary claim amendments

Claims 2-5, 10, 11, and 13-17 are being voluntarily amended to improve readability, to correct minor errors, and/or to change the scope of claimed subject matter.

Claims 2-5 as originally filed all recited "a first optical component" and "a phosphor material", despite the fact that those phrases also appear in claim 1. The amendments to claims 2, 3, and 5 reword these claims to further specify "*the* first multilayer interference reflector" (emphasis added) from claim 1. Support for these amendments can be found in the claims themselves. Claim 4 is being amended to specify that the forming step includes dispersing phosphor particles in an adhesive material. Support can be found in the as-filed claim and at page 14 lines 15-26. No new matter has been added.

Claim 10 is being amended to make clear that the first multilayer interference reflector (from claim 1) is a first polymeric multilayer short-pass or long-pass reflector. Support can be found in the as-filed claims.

Claim 11 is being amended to depend from claim 10 (which calls out the *first* polymeric multilayer short-pass or long-pass reflector) and recite that the forming step also includes forming the phosphor material in fixed relation to a *second* polymeric multilayer short-pass or long-pass reflector. Support can be found in the as-filed claims, and in connection with FIGS. 1-3.

Claims 13 and 14 are being amended to insert the word "the" before "phosphor material", for improved readability.

Claim 15 is being amended to depend from claim 14, and to specify that "the discontinuous layer" (from claim 14) defines a plurality of dots, as is taught in the specification at page 19, lines 6-18.

Claim 16 is being shortened to simply specify that each dot has an area of less than 10000 microns². Support can be found in the as-filed claim.

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The scope of claim 17 is being changed by making it depend from claim 1, and by canceling the language regarding dots and replacing it with language specifying that the positioning step includes joining the first optical component to the second optical component. Support can be found at page 11 lines 8-15.

It is respectfully submitted that no new matter has been added in making these amendments.

§ 112 Rejections

Claim 18 was rejected under 35 USC § 112, second paragraph, as indefinite because of insufficient antecedent basis for "the joining step".

In response, claim 18 has been amended to change "joining step" to "positioning step", consistent with claim 1. The rejection under 35 USC § 112 should therefore be withdrawn. Also, claim 18 has been amended to recite that the first and second optical components have surfaces configured to mate with each other, and that the positioning step includes mating the first optical component with the second optical component along such mating surfaces. Support can be found for example in connection with FIG. 15, and on page 27 lines 22-29 of the specification. No new matter has been added.

§ 102 Rejections

Claims 1, 9, and 13 were rejected under 35 USC § 102(b) as being anticipated by U.S. Patent 6,155,699 (Miller et al.). The Office Action alleged that Miller discloses a method of making a light source comprising the steps of forming a first optical component comprising a phosphor material in fixed relation to a first multilayer interference reflector, providing a second optical component comprising an LED capable of emitting light that excites the phosphor material, and positioning the first optical component to receive light emitted from the second optical component.

Applicants respectfully traverse the rejection. Independent claim 1 sets forth a method of making a light source that includes "forming" a first optical component, "providing" a second optical component, and "positioning" the first optical component to receive light emitted by the second optical component. Advantages of making the light source in multiple parts, where one part

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contains the LED and the other part contains the phosphor layer and multilayer reflector(s), include simplifying manufacturing and increasing overall yields, as discussed in the specification on page 11, lines 8-15.

In contrast, the method of manufacture taught by Miller is characterized by providing a GaN die light source, depositing a first layer of transparent material over the light source, then forming a distributed Bragg reflector (DBR) mirror over the first layer of transparent material, then depositing a layer of phosphorescent material over the DBR mirror, and next depositing a second layer of transparent material over the layer of phosphorescent material to form a lens. See, e.g., Miller at col. 4 lines 10-45, and FIG. 6, and col. 7 line 63 to col. 8 line 32. Thus, since Miller does not teach forming or providing separate first and second optical elements, he also does not teach "positioning" the first element relative to the second element, step as set forth in pending claim 1. And since Miller does not teach every element of pending claim 1, it cannot anticipate that claim. The rejection of claim 1 and its dependent claims 9 and 13, should be withdrawn.

§ 103 Rejections

Claims 2, 3, 6, and 7 were rejected under 35 USC § 103(a) as being unpatentable over Miller in view of U.S. Patent 6,172,810 (Fleming et al.); claim 5 was rejected under 35 USC § 103(a) as being unpatentable over Miller in view of U.S. Patent 6,583,930 (Schrenk et al.); claims 4, 8, 14-18 were rejected under 35 USC § 103(a) as being unpatentable over Miller in view of U.S. Patent 5,813,753 (Vriens et al.); claims 10-12 were rejected under 35 USC § 103(a) as being unpatentable over Miller in view of Fleming et al. and further in view of Vriens et al.

It is respectfully submitted that none of these rejections can be sustained since none of the applied references remedy the deficiency noted above regarding Miller. That is, none of the references teach positioning a first optical component (containing a phosphor material in fixed relation to a first multilayer interference reflector) relative to a separate second optical component (containing an LED capable of emitting light that excites the phosphor material) as specified in claim 1. Thus, the rejections under 35 USC § 103(a) should be withdrawn.

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CONCLUSION

In view of the foregoing, the application is submitted to be in condition for allowance, the early indication of which is earnestly solicited.

Other than the fee for the 2-month extension under Rule 136(a), no other fee is believed to be due by submission of this paper. If this belief is incorrect, please charge any additional required fee to Deposit Account No. 13-3723.

Respectfully submitted,

Date May 15, 2006By: Stephen C. Jensen
Stephen C. Jensen, Reg. No.: 35,207
Telephone No.: 651-736-3369

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833